

# **METALLURGIA**

*THE BRITISH JOURNAL OF METALS*

Index to Vol. XI.  
November, 1934—April, 1935.

KENNEDY PRESS LIMITED  
—— 21, Albion Street ——  
GAYTHORN, MANCHESTER 1



	Page
Improved Methods of Manufacture, Aluminium Alloys and. W. C. Devereux .. .	4f-52
Iron, Recent Developments in Cast. Walter West .. .	54-56
Institute of Metals .. .	66
Iron Rolls, Molybdenum .. .	104
Iron and Steel Works, Sodium Carbonate in .. .	107-108
Industrial Heat-treatment, Use of Electric Furnaces in. A. Glynn Lobley, M.Sc. .. .	117-120
Iron and Steel Production in India. Institute of Metals .. .	127
Institute of Metals .. .	133-134
Iron and Steel Industry in Canada. Import Duty on Copper Tubes Increased .. .	140
Iron and Steel, Tees Shipment of ..	166

## L

Light Metals and Their Alloys, Service Characteristics of the ..	6
Lubricants, Tin Compounds in ..	34
Light Alloys, Progress in Production and Use of. C. C. Hodgson ..	37-38

## M

Machine Tools .. .	7-8
Method for Measuring the Tarnishing of Highly Polished Metals, A Reflectivity .. .	16
Machine Tool Exhibition, The ..	17-22
Metallurgical Applications of Silicon. J. W. Donaldson, D.Sc. ..	20-22
Methods of Manufacture, Aluminium Alloys and Improved. W. C. Devereux .. .	49-52
Metal Production, Non-ferrous ..	75-78
Magnitogorsk Metallurgical Combine in 1934. Russian Correspondent ..	94
Melting of Cast Iron, The Electric. A. G. Robiette, B.Sc. ..	101-104
Molybdenum Iron Rolls .. .	104
Mine Production of Gold and Silver, U.S. .. .	112
Metals in the Food Industry ..	114
Magnetic Clutch, A New Design of ..	120
Management of Gas and Oil-fired Heat-treatment Furnaces, The Selection and. G. H. Barker ..	145-146
Mauretania, That Famous Liner. Special Correspondent .. .	149
Magnesium Castings, The X-ray Inspection of. N. C. Hypher, B.A., B.Sc., D.M.R.E. ..	151
Management, Scientific .. .	153
Moscow Steel Institute, The ..	161
Metal Industries Exhibition in Japan .. .	166

## N

New Ramps Constructed for Direct Plane Service .. .	8
New Deposits of Gallium .. .	14
Non-ferrous Metal Production ..	75-78
New Design of Magnetic Clutch ..	120
New Heavy Forge, A .. .	141-142

## O

Oil Burner, The Unit Control. W. F. Wiltshire, M.I.Mech.E. ..	57-58
Oil-fired Heat-treatment Furnaces, The Selection and Management of. G. H. Barker ..	145-146
Other Publications, Catalogues and	162

## P

Planes and Materials, Speed ..	11
Pulverised Fuel Firing .. .	12
Progress in Production and Use of Light Alloys .. .	37-38
Plates for China, Steel .. .	41

Progress in the Production of Quality Steel, Special .. .	43-44
Principles of Heat-treatment. Special Correspondent ..	73-74
Plant and Machinery, Foundry ..	90-92
Phosphor Bronze Castings and Their Production. F. Hudson ..	95-99
Pipe Coverings, Steam Boiler and ..	108
Production in India, Iron and Steel ..	127
Penstocks for the Norris Dam, All-welded. A. F. Davis ..	150
Properties, Characteristics, and Uses of Stainless Steel, The. S. A. Main, B.Sc., F.Inst.P. ..	155-158
Prevention of Weld Decay, The. E. C. Rollaston, M.Sc. ..	159-161

## Q

Quality Steel, Progress in the Production of. Special Correspondent ..	37-38
--	-------

## R

Research on Alloy Steels, Future. Prof. J. H. Andrew, D.Sc. ..	1-6
Ramps Constructed for Direct Plane Service, New .. .	8
Reflectivity Method for Measuring the Tarnishing of Highly-polished Metals, A .. .	16
Roller Bearings, Tapered .. .	24
Rapid Test of Thickness of Tin Coatings on Steel .. .	24
Relation to Air-Craft, Ferrous Metallurgy in .. .	34
Recent Developments in Cast Iron. Walter West .. .	54-56
Retrospect and Prospect .. .	65
Rod Mills .. .	66
Research and Castings Production ..	93
Roller Bearings in Rolling Mills, Tapered .. .	114
Recent Developments in Heat-treatment Furnaces and Auxiliary Equipment .. .	135-140
Research Association—Extended Research into Cast and Malleable Cast Iron, The British Cast Iron ..	165-166

## S

Steels, Future Research on Alloy. Prof. J. H. Andrew, D.Sc. ..	1-6
Service Characteristics of the Light Metals and Their Alloys ..	6
Special Applications of Silumin ..	8
Sodium Carbonate, The Treatment of Cast Iron with. Special Correspondent ..	9-12
Speed Planes and Materials .. .	11
Specifications and Tests for Coal and Coke .. .	16
Silicon, Metallurgical Applications of. J. W. Donaldson, D.Sc. ..	20-22
Steel, A Rapid Test of Thickness of Tin Coatings on .. .	24
Steam Turbine Installation for Tramp Steamers, Geared ..	24
Steel Industry, Development Trends in the Iron and. Wm. Ashcroft ..	35-36
Steel Plates for China .. .	41
Steel, Progress in the Production of Quality. Special Correspondent ..	43-44
Steel-making Alloys. W. F. Rowden ..	67-72
Soviet Union, Development of the Ferrous Alloys Industry in the ..	72
Symposium on the Welding of Iron and Steel .. .	80
Sintering for the Blast-furnace ..	80
Soviet Russia, Developments in. Russian Correspondent ..	105-106

Sodium Carbonate in Iron and Steel Works .. .	107-108
Steam Boiler and Pipe Coverings ..	108
Steel Quality as it Affects Heat-treatment. Specially Contributed ..	121-122
Some Factors Governing the Heat-treatment of Aluminium Alloys. J. Towns Robinson ..	129-132
Selection and Management of Gas and Oil-fired Heat-treatment Furnaces, The. G. H. Barker ..	145-146
Structural Materials, Brittleness in Ductile Engineering. W. E. Lewis, B.Sc. ..	147-148
Steel Industry in Canada, Iron and ..	140
Scientific Management .. .	153
Stainless Steel, The Properties, Characteristics, and Uses of. S. A. Main, B.Sc., F.Inst.P. ..	155-158

## T

Treatment of Cast Iron with Sodium Carbonate, The. Special Correspondent ..	9-12
The Blast-furnace .. .	11
Tests for Coal and Coke, Specifications and .. .	16
Tarnishing of Highly-polished Metals, A Reflectivity Method for Tools and Equipment, Recent Developments in. A. E. Crookell, M.I.W.E. ..	23-26
Tapered Roller Bearings .. .	24
Test of Thickness of Tin Coatings on Steel, A Rapid .. .	24
Tantalum Steels Welding .. .	26
Turbine Installations for Tramp Steamers, Geared Steam ..	24
Temperature and Atmosphere Control, Fuel-fired Furnace and. G. H. Barker ..	29-32
Trade and Industrial Progress ..	33
Trends in the Iron and Steel Industry Development. Wm. Ashcroft ..	35-36
Tools and Equipments, Recent Developments in ..	81-84
The Engineer's Training for Industry ..	84
The Magnitogorsk Metallurgical Combine in 1934. Russian Correspondent ..	94
The Electric Melting of Cast Iron. A. G. Robiette, B.Sc. ..	101-104
Tapered Roller Bearings in Rolling Mills .. .	114
Tool Steel in Sweden, The Fracture Test as Used for. Ragnar Arpi ..	123-127
The Selection and Management of Gas and Oil-fired Heat-treatment Furnaces. G. H. Barker ..	145-146
The X-ray Inspection of Magnesium Castings. N. C. Hypher, B.A., B.Sc., D.M.R.E. ..	151-153
That Famous Liner, the Mauretania. Special Correspondent ..	149
Tram Car, Arc Welded .. .	154
Tin in 1934 .. .	158
The Prevention of Weld Decay. E. C. Rollaston, M.Sc. ..	159-161
The Moscow Steel Institute ..	161
The World Copper Conference, Canada and .. .	162
The Testing of Castings. Francis W. Rowe, B.Sc. ..	163-164
Tests on Galvanised Wire and Wire Products .. .	164
The British Cast Iron Research Association—Extended Research into Cast and Malleable Cast Iron ..	165-166
Tees Shipment of Iron and Steel ..	166

## U

Use of Light Alloys, Progress in Production and. C. C. Hodgson ..	37-38
Unit Control Oil Burner, The. W. F. Wiltshire, M.I.Mech.E. ..	57-58
U.S. Mine Production of Gold and Silver .. .	112

	Page
<b>W</b>	
Welding Tantalum Sheets .. ..	26
Welding of Iron and Steel, Symposium on the .. .. .	80
Welded Steel Frames .. .. .	99
Weld Decay, The Prevention of, E. C. Rollaston, M.Sc. ..	159-161
Wire and Wire Products, Tests on Galvanised .. .. .	164

<b>X</b>	
X-ray Inspection of Magnesium Castings, The, N. C. Hypher, B.A., B.Sc., D.M.R.E. ..	151

## CORRESPONDENCE.

Research on Electrode Position of Metals .. .. .	44
--	----

## REVIEWS OF CURRENT LITERATURE.

Manufacture of Seamless Tubes ..	42
Dechema Monograph .. .. .	42
Minerals Year Book for 1934 ..	42
The Alloys of Iron and Copper ..	100
Discussion on Cold Presswork ..	100
Industrial Furnaces .. .. .	128
Die Castings .. .. .	128
Journal of the Institute of Metals, Vol. LV, (Proceedings). Pp. 304, (XV, 11 Plates) .. .. .	128

## RECENT DEVELOPMENTS IN TOOLS AND EQUIPMENT.

Automatic Flash Butt Welder, A. E. Croskell, M.I.W.E. .. .. .	23
---	----

	Page
A Scientifically Designed Bunsen Burner, Adjustable Jet and Increased Heating Efficiency ..	23
A New Light Self-indicating Universal Machine .. .. .	81-82
Bale-out Furnace for Aluminium ..	82-83
Indicating and Recording Instruments .. .. .	83-94
The Engineers Training for Industry ..	84
The Birlec-Detroit Arc Furnace ..	111-112
U.S. Mine Production of Gold and Silver .. .. .	112
Temperature Measuring Instruments ..	169
Unit Automatic Gas Machine ..	170
Soviet Pig Iron and Steel Output ..	170

## RECENT INVENTIONS.

Discharging Vertical Retorts .. ..	25
Conveying Furnace Charges .. ..	25
Distilling Zinc .. .. .	25
Casting Machines .. .. .	53
Special Railway Rails .. .. .	53
Metal Heating Furnaces .. .. .	53
Metallurgical Furnaces .. .. .	85
Coke-oven Doors .. .. .	85
Refining Copper .. .. .	85
Refining Metals .. .. .	167
Casting Plant .. .. .	167
Crucible Furnaces .. .. .	167
Case-hardening Steels .. .. .	167

## BUSINESS NOTES AND NEWS.

New Duty on Wire Articles ..	27
Diesel Engine Developments ..	27
British Pig Iron Production ..	27
Metropolitan-Cammell Carriage ..	27
Locomotives for China .. ..	27
Royal Aeronautical Society Awards ..	27

	Page
Industrial Gas Development ..	27
New Trade Openings and the Leipzig Fair .. .. .	27
Clyde Shipbuilding Revival .. ..	27
Tin Smelting Plant for Merseyside ..	59
Steel Rebates to Shipbuilders ..	59
Welding Bronze Propellers .. ..	59
Unwrought Tin Alloys Imported Free .. .. .	59
Metallic Spraying .. .. .	59
I.C.I. to Start Petrol Production Early in 1935 .. .. .	59
Davy Bros. Propose Reconstruction Scheme .. .. .	59
Railway Building Programme ..	86
The Diploma of Ingenieur de l'Ecole Supérieure de Fonderie Awarded to an Englishman .. .. .	86
Increased Duty on Enamelled Ware ..	87
General Electric Increased Capital ..	87
Russia's Need of Technical Men ..	87
New Coal-oil Plant .. .. .	87
Desert Pile Line Inaugurated ..	87
Diesel-Electric Locomotives .. ..	87
Merger to Manufacture Carbon and Graphite Electrodes .. .. .	115
Soviet Orders Placed in Britain ..	115
Ship Repairs .. .. .	115
Shipbuilding Revival .. .. .	115
Powerful Turbine for Power Station near Teningrad .. .. .	115
Royal Aeronautical Society ..	115
Merseyside to Build an Aircraft Carrier .. .. .	143
The Bessemer Gold Medal .. ..	143
Light Alloy Display .. .. .	143
Hadfields Reconstruction .. ..	143
Increased Employment .. ..	143
February Steel Output .. ..	143
Iron and Steel Progress on North-East Coast .. .. .	143
£250,000 Orders for Engines ..	143



